Avid Configuration Guidelines
HP Z230 Workstation Tower / SFF
Single Quad Core CPU
Qualified for Software Only

1.) HP Z230 Tower and SFF [Small Form Factor] AVID Qualified System Specification:

Please Note: The SFF will not support 1394 Firewire camera's / decks with Avid software because it does not have the required PCI 32-bit / 33MHz slot needed to accommodate the required Startech 1394 Firewire HBA. If the user requires support of a 1394 camera / deck the Z230 Tower is required with the appropriate 1394 controller installed in slot #5

Z230 / AVID Qualified Operating System:

- **Supported: Microsoft® Windows 7 Professional 64-bit Edition withSP1 (SP1 required)**
- **Supported: Microsoft® Windows 8 - Professional (64bit) and Windows 8 Enterprise (64bit)**

Not Supported

- **Not Supported - Microsoft® Windows 7 – any 32-bit version, or any version of Home, Ultimate or Enterprise editions.**
- **Not Supported - Microsoft® Windows XP 32 or 64-bit (any version)**
- **Not Supported - Microsoft® Windows Vista 32 or 64-bit (any version)**

Note regarding Service packs:

As of this writing Service Pack 1 is the current Service Pack release for Win7. SP1 is required for Media Composer 6.0, and NewsCutter 10 and later releases. As future Service Packs are released Avid will evaluate and announce formal support when testing is completed.

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Z230 / AVID Qualified Hardware Configuration

Qualified CPU

1.) Single Intel® Quad-Core Xeon® E3-1245 V3 Processor @ 3.4GHz / 8MB cache / 1600MHz memory. The Xeon® E3-1245 V3 Processor includes Intel embedded graphics – HD P4600.

Video Card (GPU)

1. Embedded Intel HD Graphics P4600 *(The embedded Intel HD P4600 graphics are supported for use with Media Composer / NewsCutter. Dedicated memory for the HD P4600 graphics must be set to 512MB or 1GB via the system BIOS. More information regarding this setting is provided in the BIOS settings section of this document).*

2. Optional - NVIDIA Quadro K600 1GB PCI-Express video board (not required)

O.S. System Hard Drive

500GB SATA-II 3Gb/s 7200RPM Hard Disk Drive (Minimum Recommendation)

Supported Memory Configurations

1.) Memory: 8GB (2 x 4GB) DDR3 1600 ECC memory –
Requires two 4GB DIMMs, (mixed DIMM sizes not recommended and may impact performance)
4GB memory modules installed in the following memory slots: DIMM1, DIMM2

2.) Memory: 16GB (4 x 4GB) DDR3 1600 ECC memory –
Requires four 4GB DIMMs, (mixed DIMM sizes not recommended and may impact performance)
4GB memory modules installed in the following memory slots: DIMM1, DIMM2, DIMM3, DIMM4

3.) Memory: 16GB (2 x 8GB) DDR3 1600 ECC memory –
Requires two 8GB DIMMs, (mixed DIMM sizes not recommended and may impact performance)
8GB memory modules installed in the following memory slots: DIMM1, DIMM2

Memory configuration constraints

Memory configurations which mix and match memory module sizes and locations should be avoided as they may potentially result in a poor performing, non-optimal Avid editing operating environment.

Memory Installation (same for SFF and Tower):

HP Z230 Memory DIMM Installation order

DIMMs are labelled on the motherboard 1, 2, 3, 4. Load DIMMs in the following order:

Config	DIMM 1	DIMM 2	DIMM 3	DIMM 4
8GB (2 x 4GB)	X	X		
16GB (4 x 4GB)	X	X	X	X
8GB (2 x 8GB)	X	X		

2.) Qualified O.S., Software, Hardware and shared storage supported:

Qualified Operating System	Win 7 Pro 64-bit Windows 8 - Professional (64bit) Windows 8 Enterprise (64bit)
Service Pack	SP1 – Required for Win 7
Media Composer	For Win7 M/C 6.5.4 (minimum) / For Win 8 M/C 7.0 (minimum)
NewsCutter	For Win7 N/C 10.5.4 (minimum) / For Win 8 N/C 11.0 (minimum)
ISIS 1Gb Ethernet Client (Minimum)	ISIS 7000 / 5000 V4.0
ISIS 10Gb Hi-res Ethernet Client	**Not Supported**
StarTech 1394a PCI Firewire adapter. P/N PCI1394MP 3 external ports , 1 internal Port	The StarTech HBA is the only supported interface for 1394 camera or deck. Can also be used for 1394 disk drives (recommended only for file transfers). **For Z230 Tower version only (in slot #5).** **SFF Z230 does not have a PCI 32 bit / 33MHz slot to accommodate this HBA.**

3.) AVID qualified HBA info

AVID qualified HBA	AVID Part Number	SFF Slot	Tower Slot	Function
Optional - NVIDIA Quadro K600 1GB PCI-Express video board	Not stocked by AVID	#1	#2	Optional Graphics GPU
LSI 9200-8e SAS controller	7030-30036-01	#1 or #4	#2 or #4	SAS Local Storage: Xtore StudioRAID 16Re (16-bay) chassis Xtore StudioRAID 5Te (5-bay) chassis
Atto H680	7030-30028-01	#1 or #4	#2 or #4	SAS Local Storage – Avid VideoRAID SR (16-bay)
Atto R680	7030-30435-00	#1 or #4	#2 or #4	SAS Local Storage –Avid VideoRAID ST (5-bay) and Xtore StudioRAID 5Ti (5-bay) chassis
StarTech PCI1394MP Firewire adapter. 1394a PCI HBA	Not stocked by AVID (Available direct from StarTech) More info below	**N/A FOR SFF**	#5	Mandatory primary 1394 connectivity for 1394 camera / deck

SLOT CONFIGURATION WARNING: The Z230 comes in Tower and SFF (Small Form Factor) configurations. These configurations each use a different system motherboard. As a result there are different slot configuration guidelines for each model. The SFF has four I/O slots and is covered in section 4 below. The Tower has five I/O slots and is covered in section 5 below.

4.) Slot Configuration For SFF [Small Form Factor] Z230:

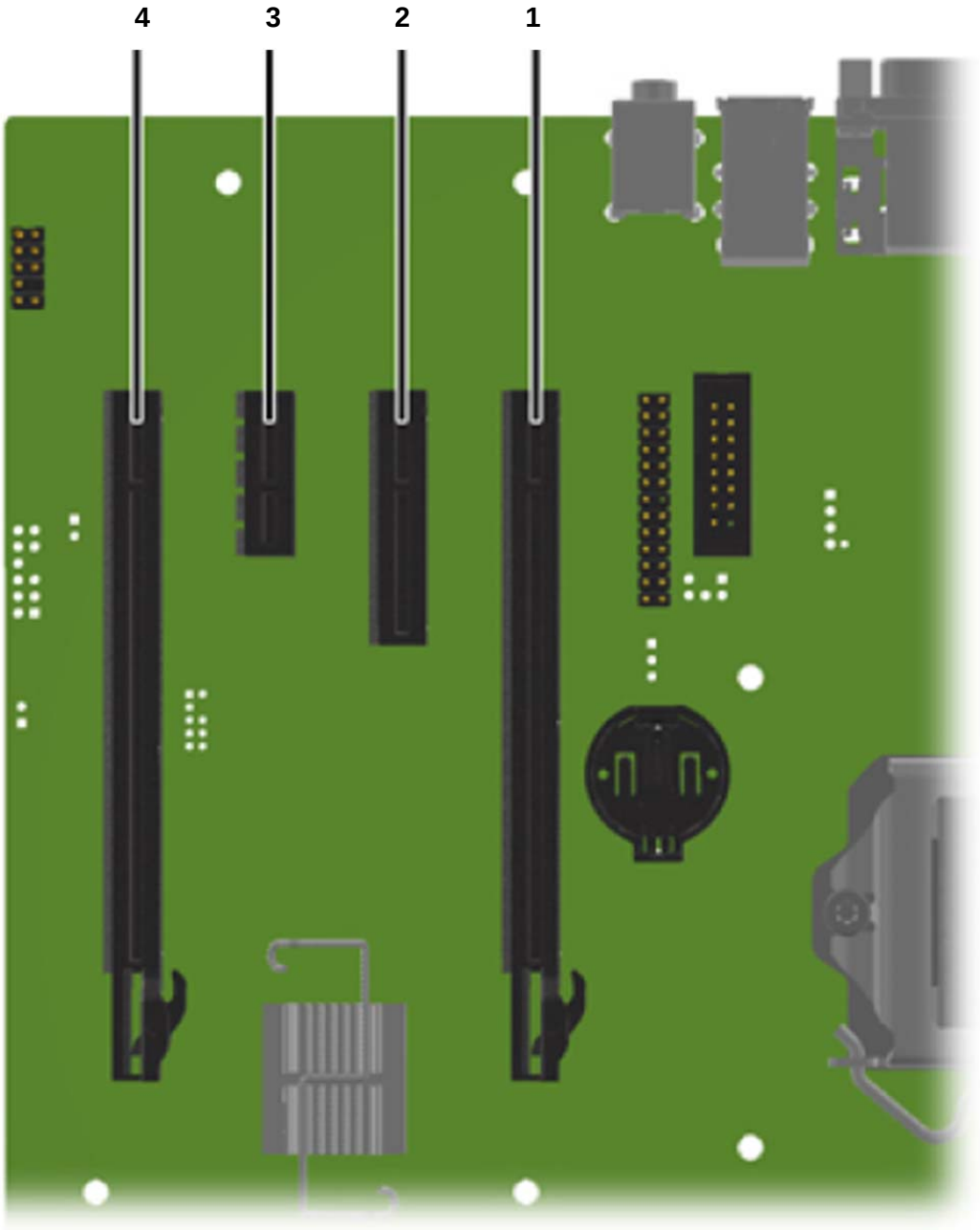
Please Note: The SFF will not support 1394 Firewire devices with Avid software because it does not have the required PCI 32-bit / 33MHz slot needed to accommodate the required Startech 1394 Firewire HBA

All slots in SFF model are half length and half height

SFF Slot #	Electrical	Mechanical	Utilization
1	X16 PCI-E Gen 3	X16	*1 Optional Graphics Card **or** Local Storage HBA: Nvidia Quadro K600 Atto H680 – Avid SAS VideoRAID SR (16-bay) support Atto R680 – Avid SAS VideoRAID ST (5-bay) support Atto R680 – SAS Xtore StudioRAID 5Ti (5-bay) support LSI 9200-8e SAS Xtore 16Re (16-bay) support LSI 9200-8e SAS Xtore 5Te (5-bay) support
2	x1 PCI-E Gen 2	X4	*1 Not defined for use.
3	x1 PCI-E Gen 2	X1	*1 Not defined for use.
4	x4 PCI-E Gen 2	X16	*1 Local Storage HBA: Atto H680 – Avid SAS VideoRAID SR (16-bay) support Atto R680 – Avid SAS VideoRAID ST (5-bay) support Atto R680 – SAS Xtore StudioRAID 5Ti (5-bay) support LSI 9200-8e SAS Xtore 16Re (16-bay) support LSI 9200-8e SAS Xtore 5Te (5-bay) support
	Embedded Intel i217-LM GbE NIC		Use for connectivity to Avid ISIS 5000 / 7000 Requires Windows 18.3 Intel ProSet Driver available at: http://avid.force.com/pkb/articles/en_US/download/Intel-18-3-NIC-Driver

1 *Firewire 1394 camera / deck should not be connected to any optional or 3rd party PCI-Express 1394 HBA installed in Slot 1, 2, 3 or 4. The Z230 SFF does not support a 1394 camera or deck with Media Composer or NewsCutter.

Z230 SFF [Small Form Factor] I/O slot layout:

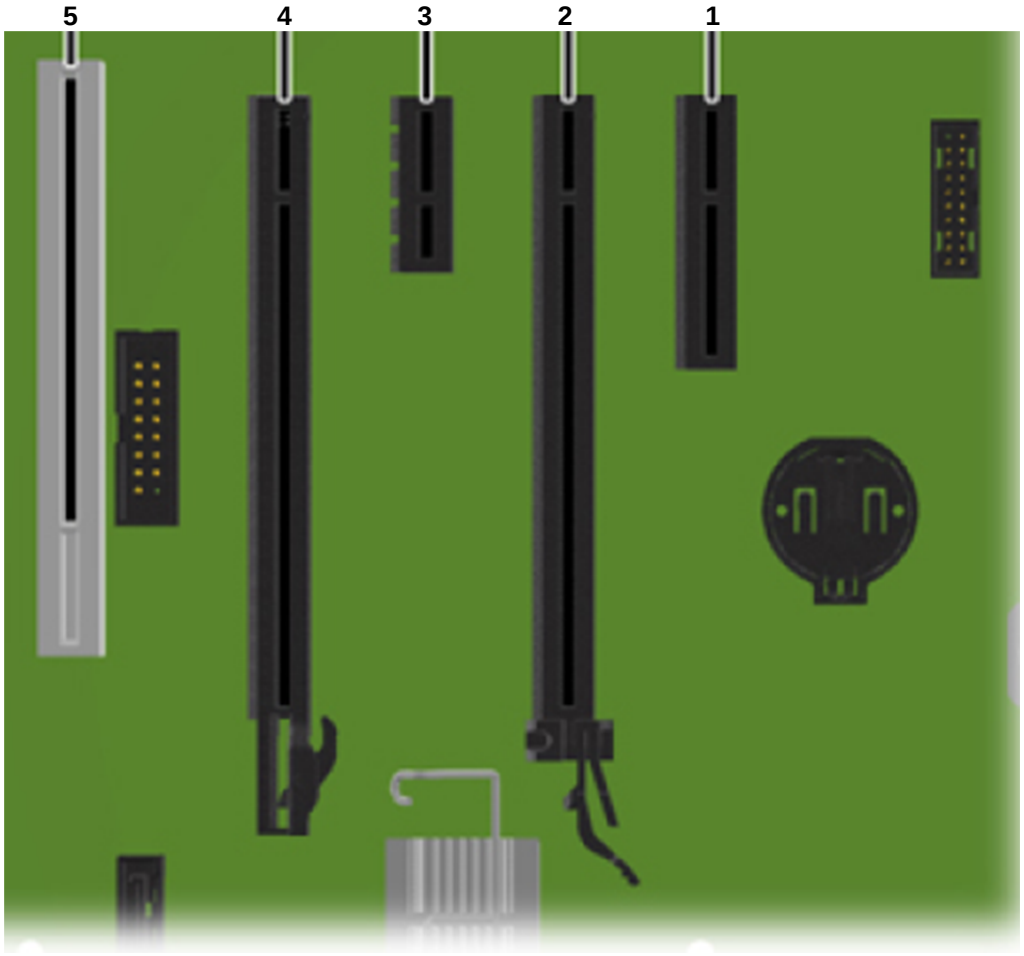


5.) Slot Configuration For Tower Z230:

Tower Slot #	Electrical	Mechanical	Utilization
1	x1 PCI-E Gen 2	X4	***1** Not defined for use.
2	x16 PCI-E Gen 3	X16	***1** Optional Graphics Card **or** Local Storage HBA: Nvidia Quadro K600 Atto H680 – Avid SAS VideoRAID SR (16-bay) support Atto R680 – Avid SAS VideoRAID ST (5-bay) support Atto R680 – SAS Xtore StudioRAID 5Ti (5-bay) support LSI 9200-8e SAS Xtore 16Re (16-bay) support LSI 9200-8e SAS Xtore 5Te (5-bay) support
3	x1 PCI-E Gen 2	X1	***1** Not defined for use.
4	x4 PCI-E Gen 2	X4	***1** Local Storage HBA: Atto H680 – Avid SAS VideoRAID SR (16-bay) support Atto R680 – Avid SAS VideoRAID ST (5-bay) support Atto R680 – SAS Xtore StudioRAID 5Ti (5-bay) support LSI 9200-8e SAS Xtore 16Re (16-bay) support LSI 9200-8e SAS Xtore 5Te (5-bay) support
5	PCI 32bit / 33MHz	PCI 32/33	Optional StarTech PCI1394MP PCI 1394 controller
	Embedded Intel i217-LM GbE NIC		Use for connectivity to Avid ISIS 5000 / 7000 Requires Windows 18.3 Intel ProSet Driver available at: http://avid.force.com/pkb/articles/en_US/download/Intel-18-3-NIC-Driver

***1** Firewire 1394 camera / deck should not be connected to any optional or 3rd party PCI-Express 1394 HBA installed in Slot 1, 2, 3 or 4. For operation with Media Composer / NewsCutter, connectivity to a 1394 Camera / Deck must be via a StarTech PCI1394MP HBA installed in sot #5.*

Z230 Tower I/O slot layout:



6.) Clarification / Utilization of optional add-in 1394 controllers for camera / deck control.

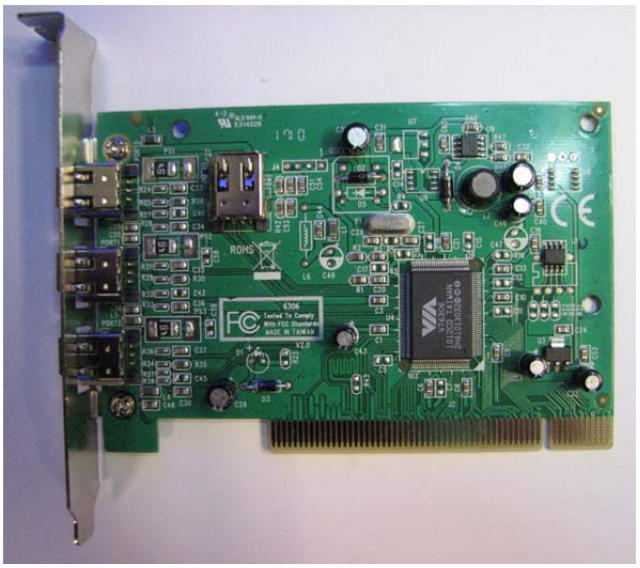
For Media Composer and NewsCutter, a 1394 camera or deck can only be used with the Z230 Tower and must connect via the optional StarTech PCI1394MP PCI 1394 4-port controller (3 external ports , 1 internal port) which resides in slot #5.

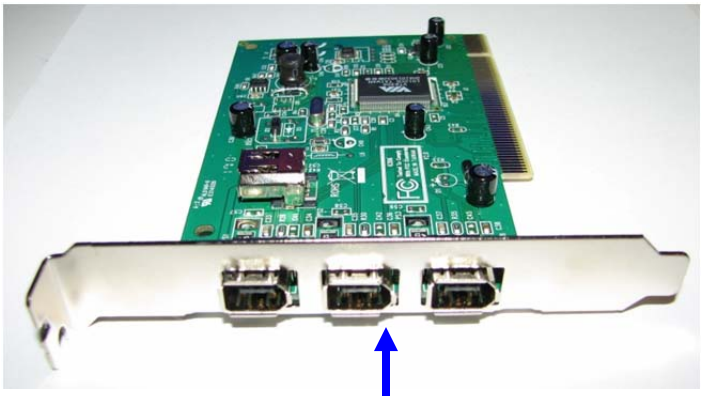
Add-in 1394 Controller	Utilization for 1394 Camera / Deck connectivity with Media Composer & NewsCutter
Optional StarTech PCI1394MP PCI 1394a 4-port controller (Sot #5 , Tower model only)	**Mandatory requirement.** **Yes** - Supports 1394 Deck / Camera Does not fit in SFF system , No available I/O slot, and is Full-Height HBA
Optional HP or 3rd party FireWire IEEE 1394 PCI-Express x1 HBA	**Cannot be used for connectivity to a 1394 Deck / Camera which is being interfaced to Media Composer or NewsCutter** **It is alright for this HBA to reside in the system. It will not cause any functional problem as long as it is not used for 1394 Camera / Deck connectivity for Media Composer or NewsCutter.**

Below are pictures and links to specifications and ordering information for the Avid qualified PCI 1394 Firewire HBA:

Optional StarTech PCI1394MP PCI 1394 4-port (3 external / 1 internal) controller, (Slot #5 , Tower Only)

http://www.startech.com/Cards-Adapters/FireWire/4-Port-IEEE-1394-FireWire-PCI-Card~PCI1394MP





External 1394 ports for M/C and N/C 1394

How to identify the unqualified (incorrect) Firewire HBA:

The incorrect (unqualified) PCI-Express 1394 Firewire HBA is a PCI-e x1 card and would reside in slot 1, 2, 3 or 4 in either the Tower or SFF. *It is alright for this HBA to reside in the system, it will not cause a problem as long as it not used for 1394 Camera / Deck connectivity for Media Composer or NewsCutter.*

7.) Various Configuration Issues:

A.) HP Z230 (Tower and SFF) System BIOS settings:

1.) Verify CPU Hyper-Threading – Enable
2.) If using the embedded Intel HD P4600 graphics, set dedicated video memory to 512MB **
3.) Set Intel Turbo Mode*** – Disable

** Only required if using the embedded Intel HD P4600 graphics. If using the Nvidia Quadro K600 do not make this setting because it will allocate memory that will not be useable by the system O.S.

*** Only required if connecting USB audio I/O devices. This setting will eliminate any audio "motor-boating" or audio "popping" which may be experienced with USB audio I/O devices.

Set Z230 (Tower and SFF) Required system BIOS settings:

- During boot up press F10 to invoke BIOS Set Up.

- Select the Advanced tab

- Select Device Options Setup

- Select Hyper-Threading
- Default setting is Enable – verify that this is set

- Select IGD Memory (only if using embedded Intel HD 4600 graphics, otherwise skip this setting)
- Select 512MB

- Select Turbo Mode
- Default setting is Enable
    - Change this setting from Enable to Disable (Only required if connecting USB audio I/O devices)

- Press F10 to Save and Exit

B.) O.S. setting recommendations for optimum performance with Avid Editing applications:

The following link provides O.S. setting suggestions for ensuring optimum performance when working with your Avid editing application with either Windows 7 or Windows 8 O.S.

http://avid.force.com/pkb/articles/en_US/troubleshooting/en390339

C.) Qualified Video Drivers:

AVID Software	Min Version(s)	GPU	Driver Required
Media Composer NewsCutter	6.5.4 10.5.4	Quadro K600	Nvidia 310.90
Media Composer NewsCutter	7.0.3 11.0.3	Quadro K600	Nvidia 320.78
Media Composer NewsCutter	6.5.4 10.5.4	Intel HD P4600	Recommend using latest posted on HP's website

After installation of the AVID software the supported Nvidia driver can be found in the following directory: C:\Program Files\Avid\Utilities\Nvidia.

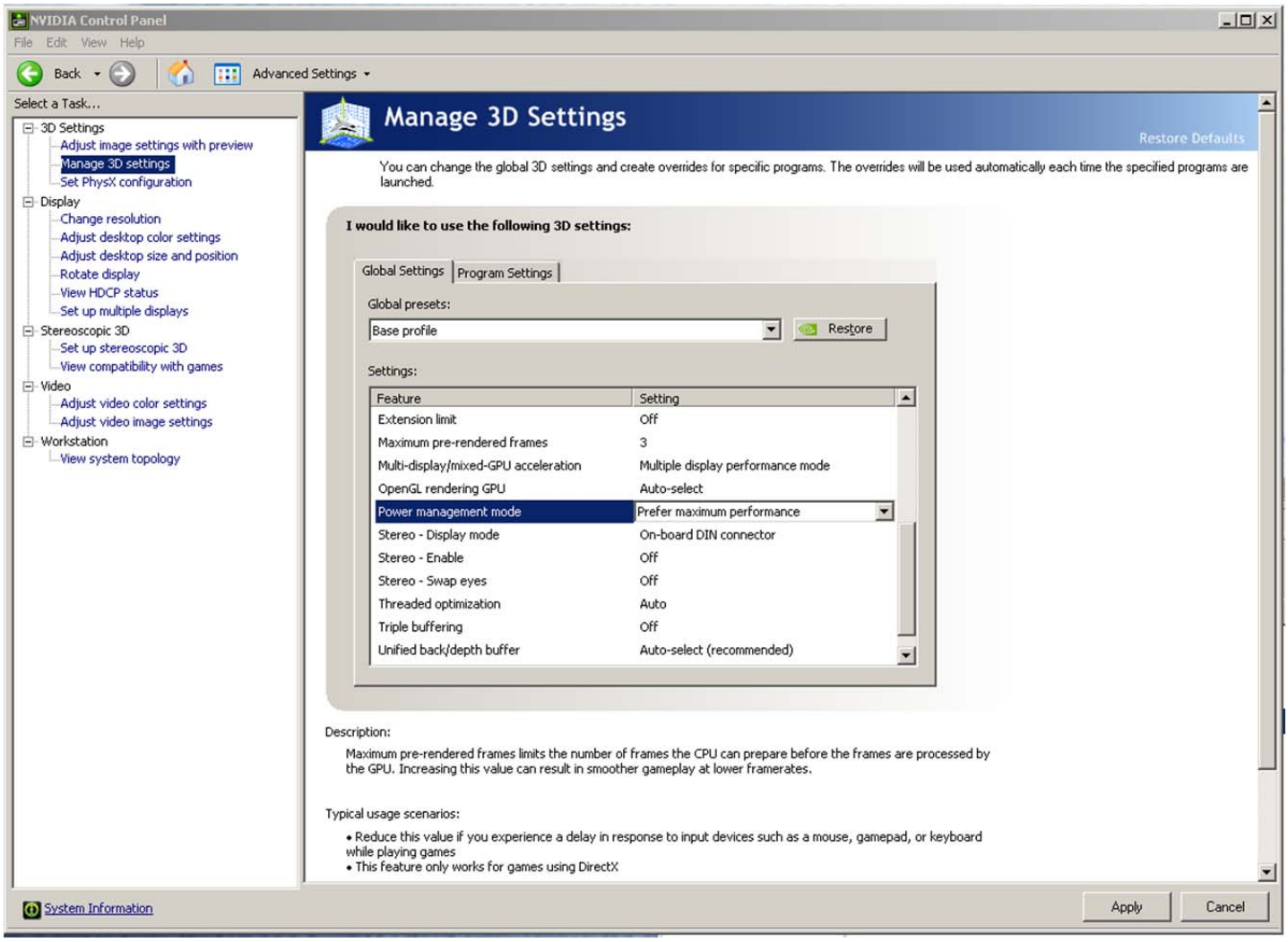
If a specified Nvidia driver is NOT included with the patch Avid installer, the required Nvidia driver can typically be found on the Avid Knowledge Base.

The supported Intel HD P4600 driver can be found on the H.P. support website for the Z230.

Refer to the ReadMe for driver information for the specific version of Media Composer or NewsCutter being installed

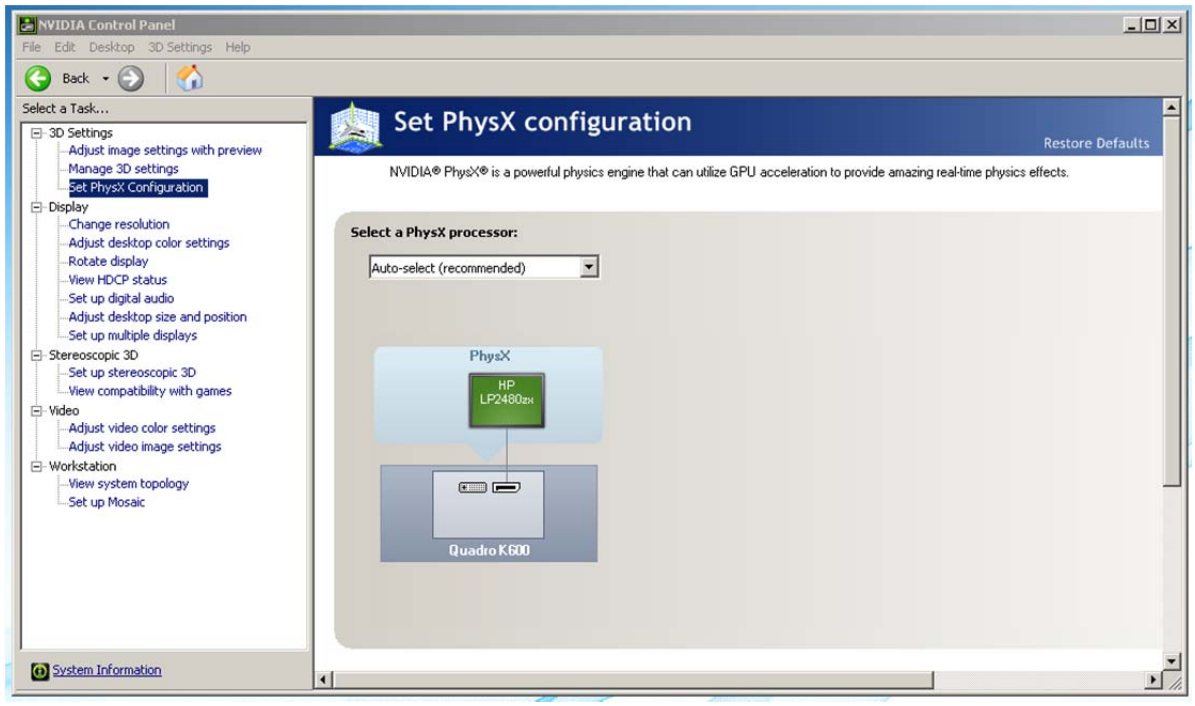
Set optimized Nvidia driver settings for Avid editing environments:

1. See picture below
2. Right-Click on the desktop and select Nvidia Control Panel
3. Select Manage 3D Settings
4. Select “Global Settings” Tab
5. Under the “Global Settings” tab select “Base Profile”.
6. Scroll down and locate the “Power Management Mode” feature. The default setting is “Adaptive”. For the “Power management mode” feature, select “Prefer maximum performance” as shown in the picture below.

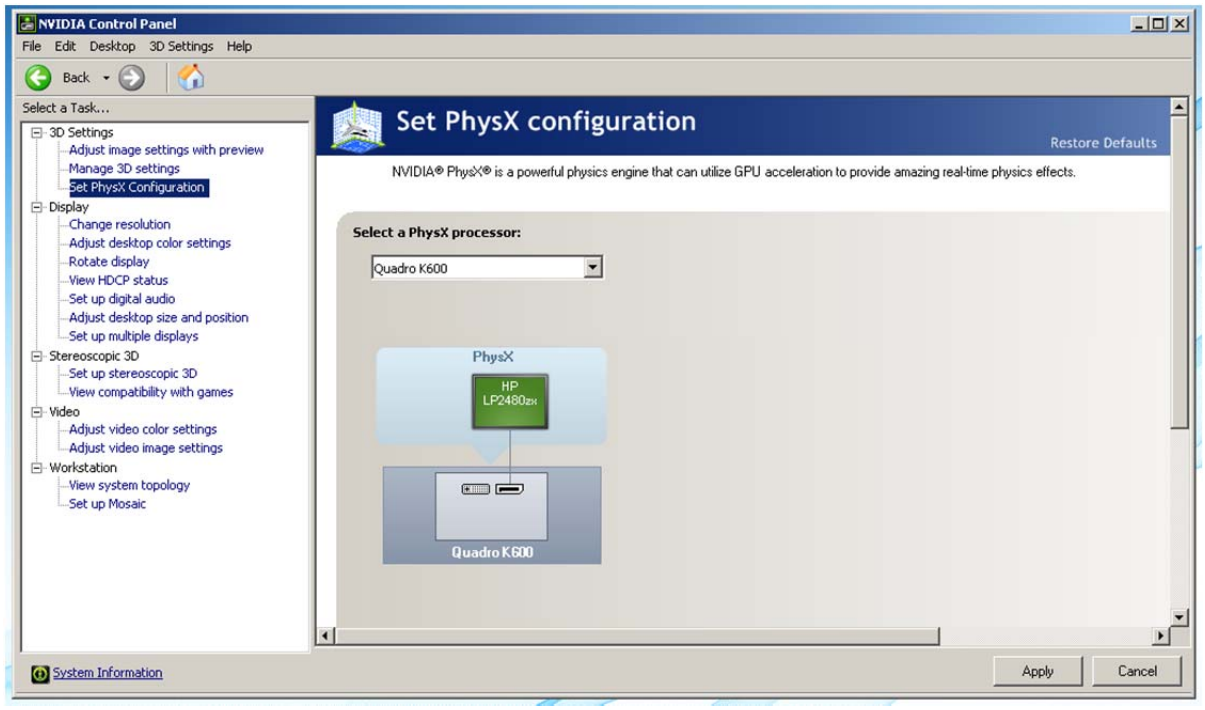


7. Depress the “Apply” button.

8. Set the PhysX device configuration
9. Under 3D Settings select “Set PhysX Configuration” (See picture below)
10. Under “Select a PhysX processor:” , Auto-select is currently selected.



11. See picture below
12. Under “Select a PhysX processor:” , Change the setting to Quadro K600
13. Depress the “Apply” button.



14. Nvidia driver optimization settings for Avid environments are complete

D.) Serial Port Deck Control:

The HP Z230 Tower and SFF workstation(s) do not have an embedded serial port. Serial port deck control can be established via two methods (both of which have been qualified by Avid and will maintain frame accuracy in Avid environments)

1. Addenda model **RS-USB / 4** direct USB-to-RS422 serial adapter. This is a simple device which connects directly from a USB 2.0 port of the Z230 directly to the RS422 port of a deck.
   http://www.addenda.com/addenda-elect/products/rsUSB4.php

2. Combination of a Keyspan (Tripp-Lite) Model USA-19HS USB-to-serial-port adapter with Addenda Rosetta Stone model RS – 2/8 RS232-to-RS422 converter

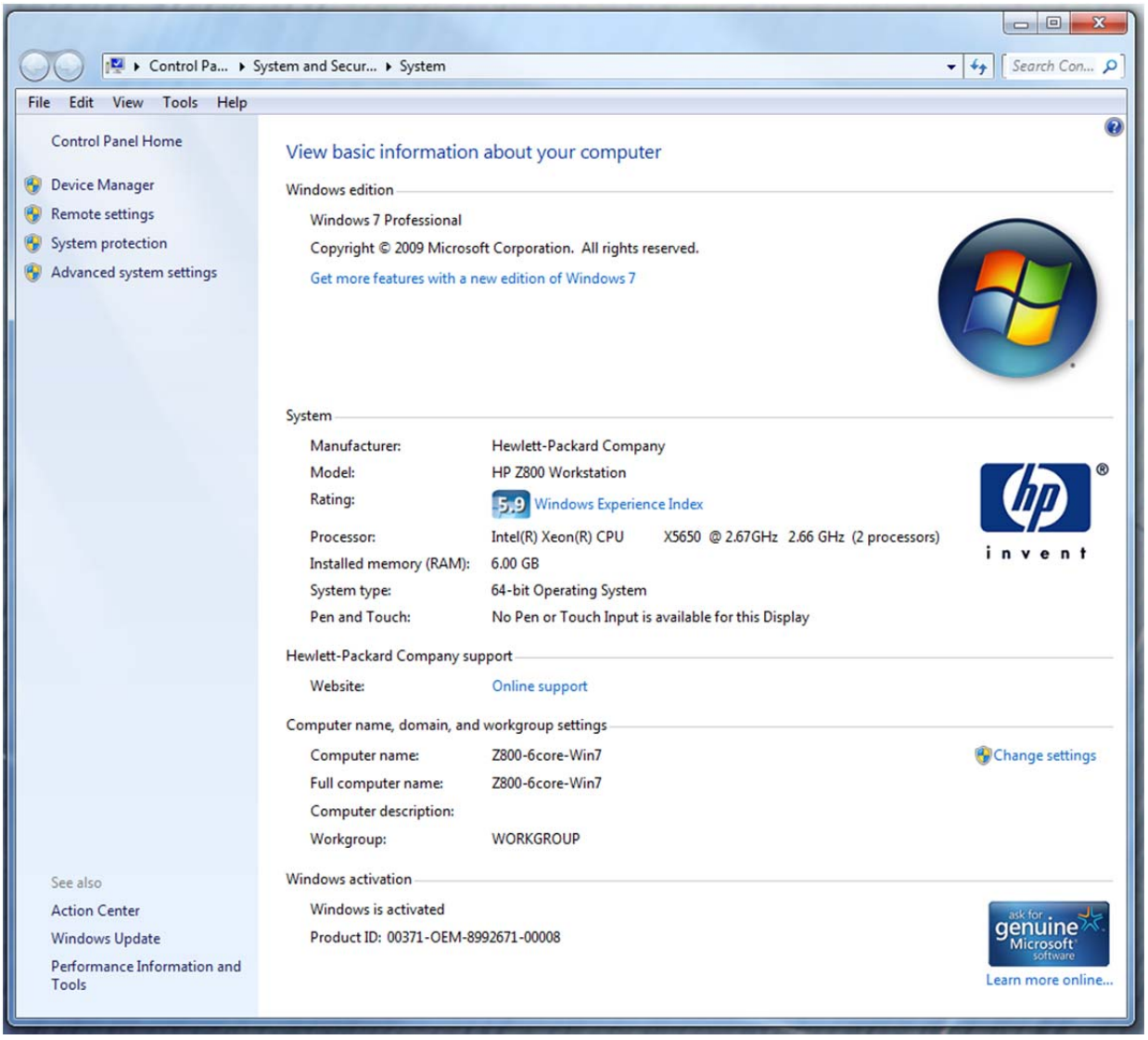
   - Keyspan (Tripp-Lite) Model USA-19HS (AVID P/N 7080-20013-01)
     http://www.tripplite.com/en/products/model.cfm?txtSeriesID=518&EID=13384&txtModelID=3914
   - Addenda Rosetta Stone (or equivalent) model RS – 2/8 RS232-to-RS422 converter (AVID P/N 7070-00507-01)
     http://www.addenda.com/addenda-elect/products/rs28.php

To connect the Keyspan 19HS / Addenda RS -2/8 combination:

- Install the Keyspan 19HS driver before plugging the device into a Z230 USB port.
- Once the Keyspan 19HS driver is installed then plug the Keyspan 19HS into a Z230 USB 2.0 port.
- The Keyspan 19HS will now show up in device driver.
- Using a serial cable, connect the 9-pin serial port of the Keyspan 19HS USB adapter to the port of the Addenda marked RS232 from PC
- Using a 2nd serial port cable connect the port of the Addenda marked “RS422 to VTR” to the deck control serial port of the deck.

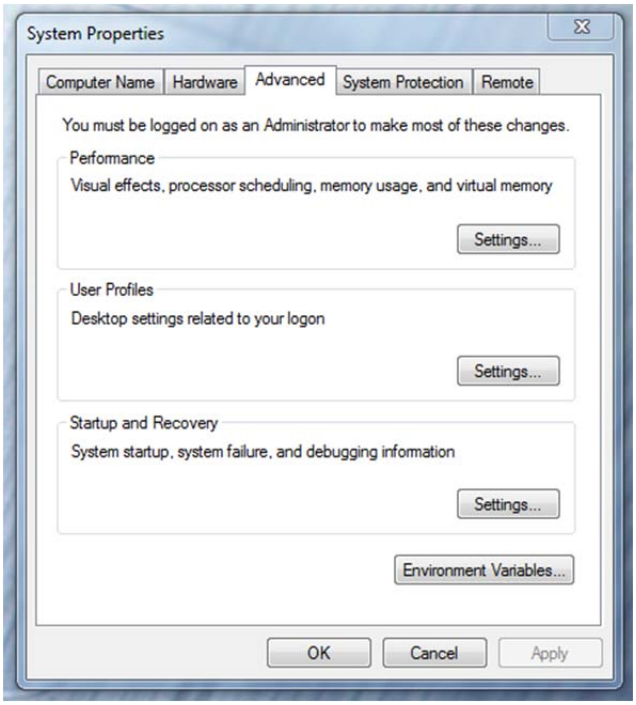
E.) Set Windows “Visual Effects” for “best performance”:

1. Right-Click on Computer icon
2. Select Properties
3. The screen below will be displayed:

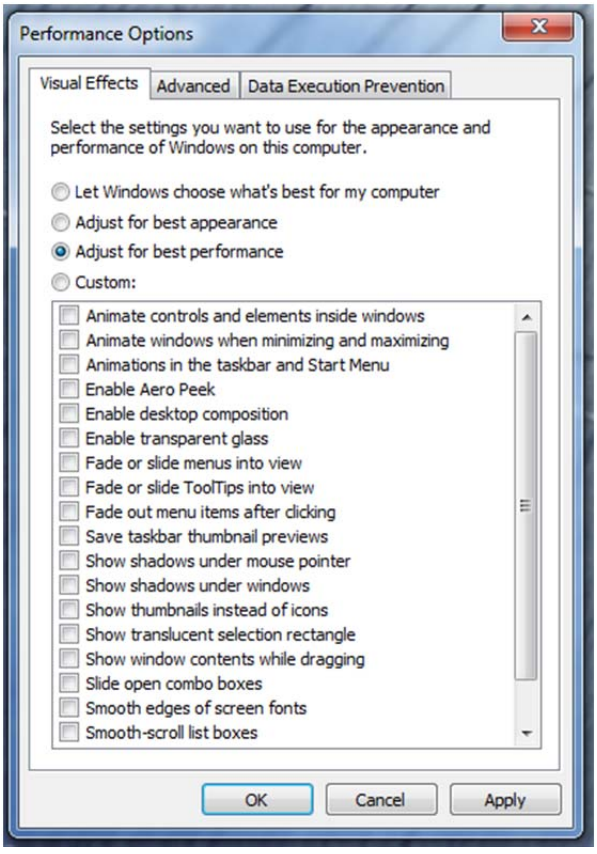

Control Pa... ▸ System and Secur... ▸ System
Search Con...
File Edit View Tools Help
Control Panel Home
Device Manager
Remote settings
System protection
Advanced system settings
View basic information about your computer
Windows edition
Windows 7 Professional
Copyright © 2009 Microsoft Corporation. All rights reserved.
Get more features with a new edition of Windows 7
System
Manufacturer: Hewlett-Packard Company
Model: HP Z800 Workstation
Rating: 5.9 Windows Experience Index
Processor: Intel(R) Xeon(R) CPU X5650 @ 2.67GHz 2.66 GHz (2 processors)
Installed memory (RAM): 6.00 GB
System type: 64-bit Operating System
Pen and Touch: No Pen or Touch Input is available for this Display
invent
Hewlett-Packard Company support
Website: Online support
Computer name, domain, and workgroup settings
Computer name: Z800-6core-Win7
Full computer name: Z800-6core-Win7
Computer description:
Workgroup: WORKGROUP
Change settings
Windows activation
Windows is activated
Product ID: 00371-OEM-8992671-00008
ask for genuine Microsoft software
Learn more online...
See also
Action Center
Windows Update
Performance Information and Tools

4. On the left side of the screen above, locate and select “Advanced system settings”

5. The System properties window will be displayed. (Picture below).



6. Under the “Advanced” tab depress the “Settings...” button for performance.
7. The “performance Options” window will be displayed.
8. Under the “Visual Effects” tab select the “Adjust for best performance” selection. (Picture below).


Performance Options
Visual Effects
Advanced
Data Execution Prevention
Select the settings you want to use for the appearance and performance of Windows on this computer.
Let Windows choose what's best for my computer
Adjust for best appearance
Adjust for best performance
Custom:
Animate controls and elements inside windows
Animate windows when minimizing and maximizing
Animations in the taskbar and Start Menu
Enable Aero Peek
Enable desktop composition
Enable transparent glass
Fade or slide menus into view
Fade or slide ToolTips into view
Fade out menu items after clicking
Save taskbar thumbnail previews
Show shadows under mouse pointer
Show shadows under windows
Show thumbnails instead of icons
Show translucent selection rectangle
Show window contents while dragging
Slide open combo boxes
Smooth edges of screen fonts
Smooth-scroll list boxes
OK
Cancel
Apply

9. Depress the “Apply” button
10. Reboot Windows
11. Required Windows visual performance settings for Avid environments are now complete

F.) Embedded Intel i217-LM 1G/b network interface for ISIS 5000 / 7000 connectivity:

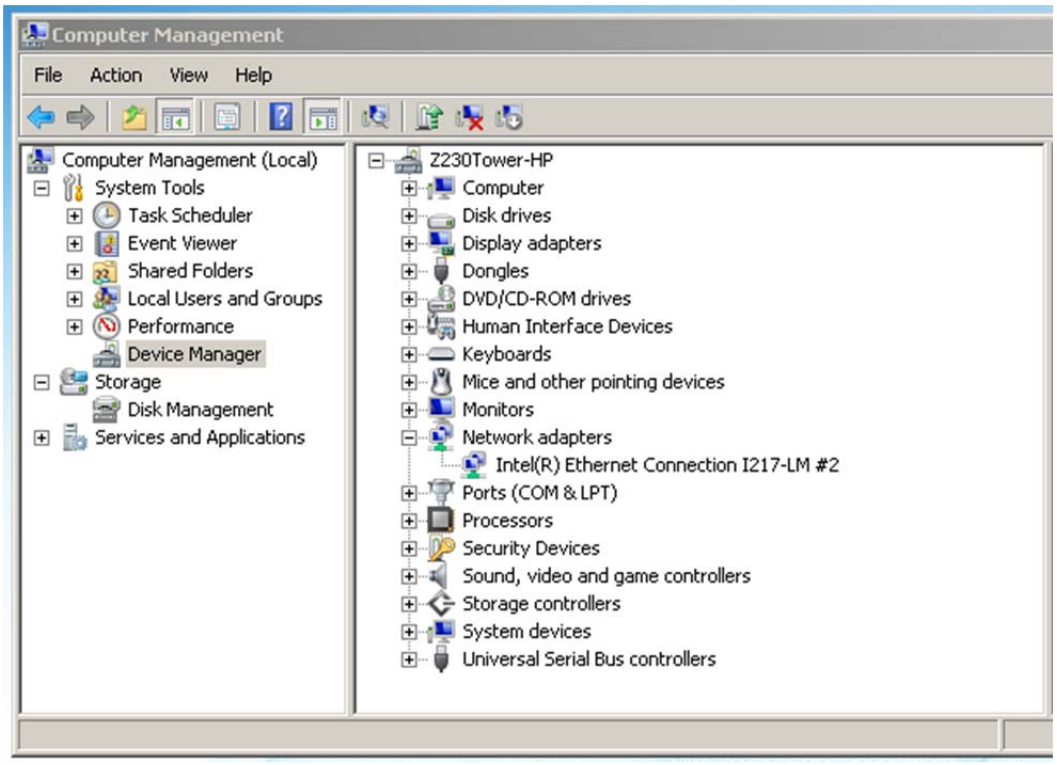
For proper operation and connectivity of the Intel i217-LM network interface with ISIS the following are required (these settings will be made automatically by the ISIS 4.5 client installer if the 18.3 driver is installed prior to the ISIS client, for ISIS client prior to ver 4.5 these settings will need to be manually set):

1. Requires Windows 18.3 Intel ProSet Driver available at:
   http://avid.force.com/pkb/articles/en_US/download/Intel-18-3-NIC-Driver

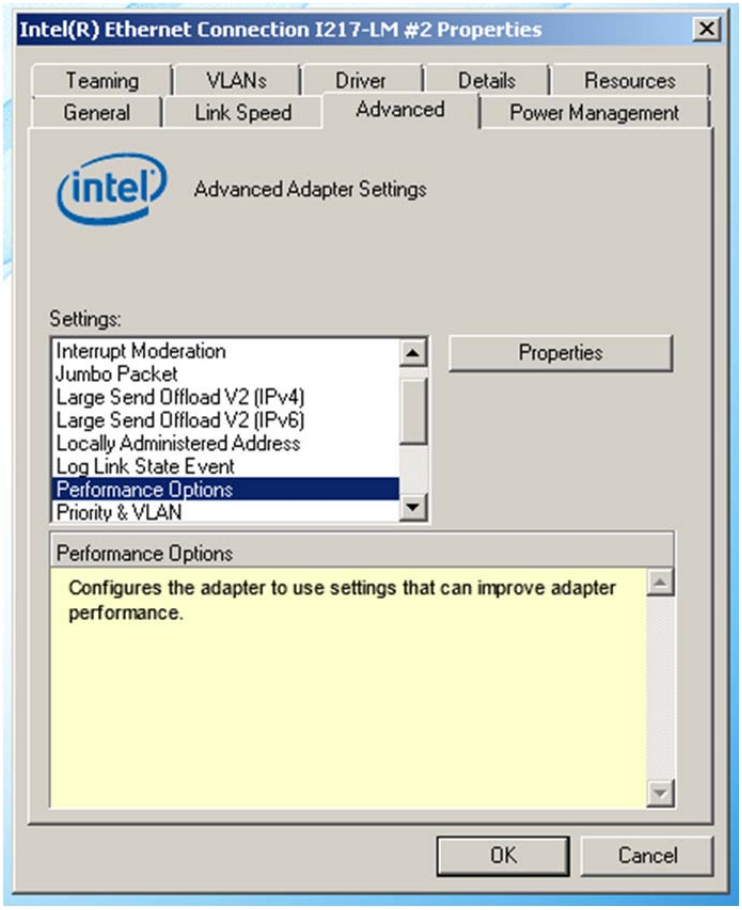
2. For the Intel i217-LM driver, under the performance settings, change the following parameters:
   - Receive Buffers to 1024
   - Transmit Buffers to 1024

3. Disable the windows firewall.

To set the Intel i217-LM Receive / Transmit buffers:
Go to device manager. Under "Network adapters" select the device named "Intel Ethernet Connection i217-LM", which will be used for ISIS connectivity.

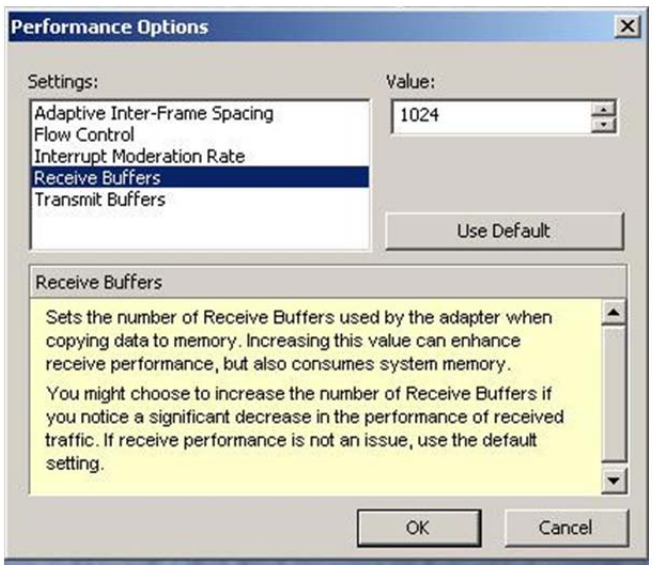


Right-click, Select properties, select "Advanced" tab.

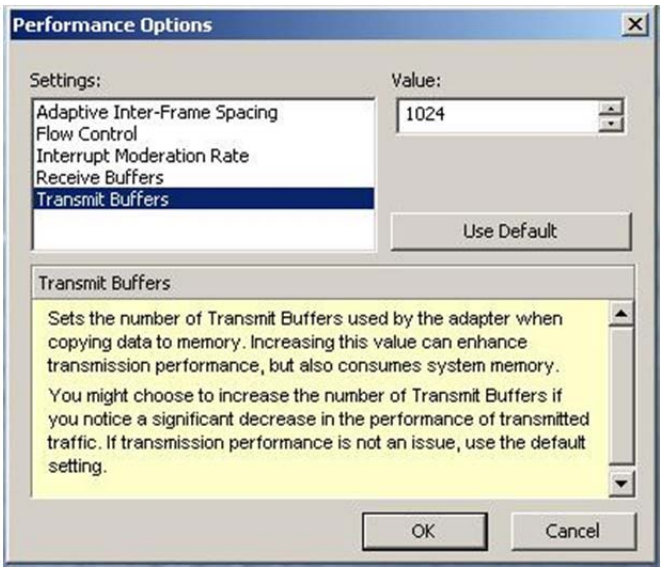


Select Performance Options

Set Receive Buffers to 1024

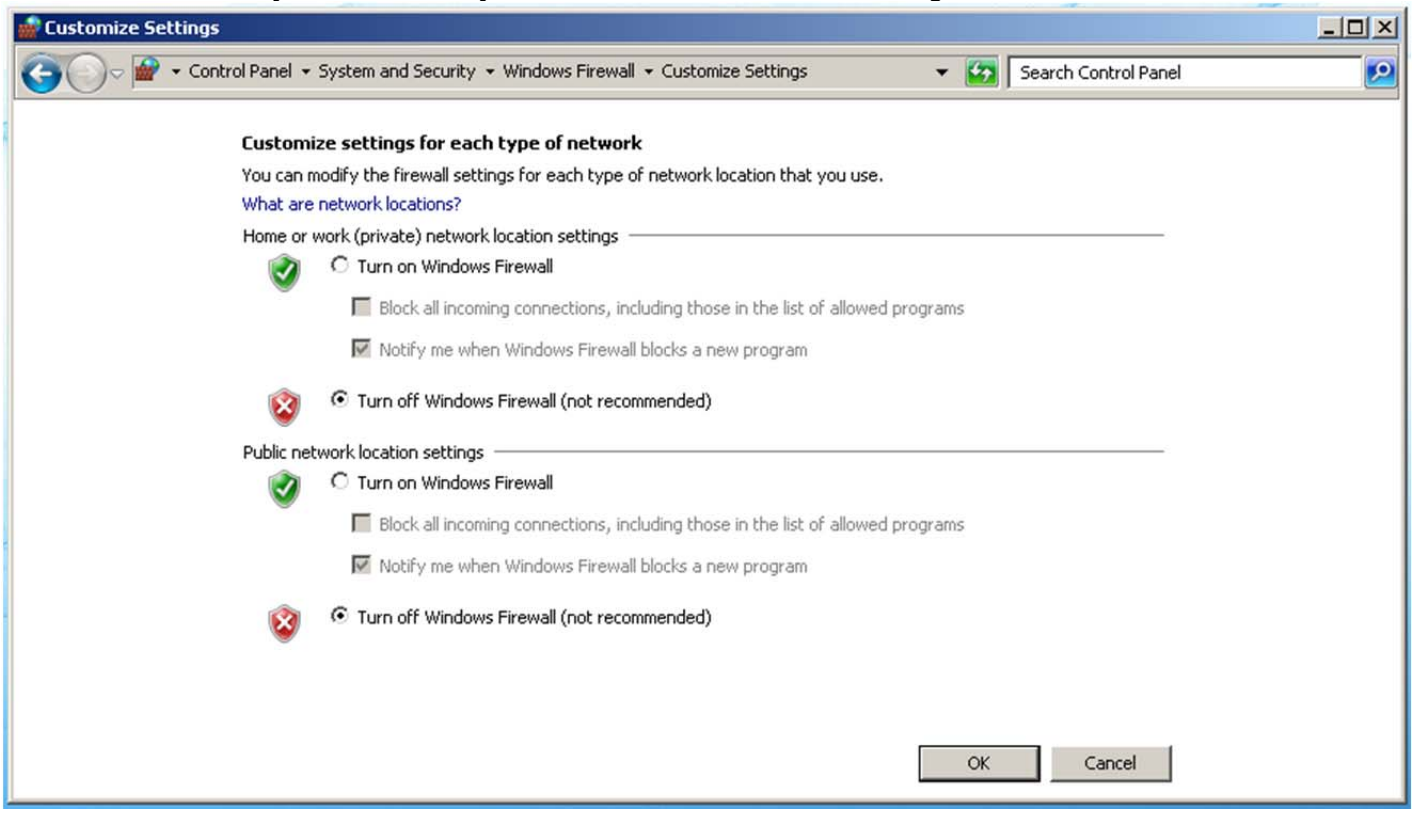

Performance Options
Settings:
Value:
Adaptive Inter-Frame Spacing
Flow Control
Interrupt Moderation Rate
Receive Buffers
Transmit Buffers
1024
Use Default
Receive Buffers
Sets the number of Receive Buffers used by the adapter when copying data to memory. Increasing this value can enhance receive performance, but also consumes system memory.
You might choose to increase the number of Receive Buffers if you notice a significant decrease in the performance of received traffic. If receive performance is not an issue, use the default setting.
OK
Cancel

Set Transmit Buffers to 1024


Performance Options
Settings:
Value:
Adaptive Inter-Frame Spacing
Flow Control
Interrupt Moderation Rate
Receive Buffers
Transmit Buffers
1024
Use Default
Transmit Buffers
Sets the number of Transmit Buffers used by the adapter when copying data to memory. Increasing this value can enhance transmission performance, but also consumes system memory.
You might choose to increase the number of Transmit Buffers if you notice a significant decrease in the performance of transmitted traffic. If transmission performance is not an issue, use the default setting.
OK
Cancel

Disable Windows Firewall

Select Control Panel / System and Security / Windows Firewall / Customize Settings


Customize Settings
Control Panel ▸ System and Security ▸ Windows Firewall ▸ Customize Settings
Search Control Panel
Customize settings for each type of network
You can modify the firewall settings for each type of network location that you use.
What are network locations?
Home or work (private) network location settings
Turn on Windows Firewall
Block all incoming connections, including those in the list of allowed programs
Notify me when Windows Firewall blocks a new program
Turn off Windows Firewall (not recommended)
Public network location settings
Turn on Windows Firewall
Block all incoming connections, including those in the list of allowed programs
Notify me when Windows Firewall blocks a new program
Turn off Windows Firewall (not recommended)
OK
Cancel

Revision Update

Revision	Date	Name	Update
Draft	Oct 10th , 2013	Joe Conforti	Initial Release of the Z230 Workstation Tower / SFF configuration guide for Media Composer and NewsCutter [Software only]